DOCUMENT RESUME

ED 261 546 FL 015 214

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TITLE The Acquisition of Transitivity in Quiche Mayan.
INSTITUTION Stanford Univ., Calif. Dept. of Linguistics.
PUB DATE Aug 85
NOTE 9p.; Papers and Reports on Child Language Development, Volume 24, p115-22, Aug 1985. For related documents, see FL 202-213 and 215-17.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Case Studies; *Child Language; *Language Acquisition; *Learning Processes; Morphology (Languages); *Quiche; Syntax; Toddlers; *Verbs

ABSTRACT

A study of the awareness of verb transitivity in the spontaneous speech of two two-year-old native speakers of Quiche was accomplished by examining three factors: transitive terminations given to verbs, subject markers on the verbs, and syntax. The first was studied by counting the number of transitive verbs used with both transitive and intransitive terminations and studying the error patterns. The results indicated an extremely early control of verb transitivity with little of the overgeneralization seen with other forms. The second factor was examined through error patterns in subject agreement, which provided less rich but supporting evidence for early grasp of transitivity. The third factor, syntax, was found to be less easy to assess because of the relative absence of non-focused, non-emphatic noun phrases in Quiche. However, some evidence supporting early acquisition of transitivity was found in the children's utterances. The early acquisition of this awareness is somewhat surprising in light of the relative lack of evidence of transitivity in adult speech in Quiche. (MSE)

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THE ACQUISITION OF TRANSITIVITY IN QUICHÉ MAYAN

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Verb subcategorization is such a fundamental principle of syntax that it is easy to overlook the difficulties children face in its acquisition. A child learning English encounters many verbs which sometimes appear with a direct object and sometimes without (e.g. roll, paint, see, work, run). These create a learnability problem if the child overgeneralizes this variability to verbs which never take a direct object (sweat, fall, wish, disappear, etc.). Some theorists might rule out such overgeneralizations by predicting that children simply wait for positive evidence in the form of an overt object before using the verb that way themselves. Children, however, show no such hesitency. Bowerman (1974) gives examples of children using English intransitive verbs with direct objects to express causation ('He fell down the block').

A learnability theorist might take a second line of retreat and argue that even though children overgeneralize the alternation between transitive and intransitive usages they will eventually receive positive evidence of their error. In circumstances when a child would use an intransitive verb with a direct object he or she would overhear more mature speakers using alternative expressions. The child producing 'He fell down the block' will hear someone else say 'He knocked down the block'. The child uses this new information as a basis for retreating from his or her overgeneralization. For this explanation to work, the child will have to generalize the retreat to all of his or her intransitive verbs rather than waiting for alternative expressions to each of his or her causative expressions. Evidence for such a retreat should show up in the form of an overgeneralization to all intransitive verbs. The child may hesitate for a time to supply a causative form, or worse, produce a paraphrastic expression in place of a correct verb form.

A third possibility is that the child initially relies upon innate cognitive categorizations to separate verbs into transitive and intransitive classes. Pinker (1984) has termed this idea 'semantic bootstrapping' although the basic idea has been circulating in the child language literature for some time. In the context of a simple action (such as a rolling ball), the child assumes a verb such as rolling is intransitive. In a more complicated situation (as when someone rolls the ball), the child assumes the patient (the ball) is a direct object and the verb roll is transitive. Thus, the initial syntactic categories of a child's grammar should be direct reflections of human cognitive organization. Such a theory presupposes a remarkable degree of grammatical uniformity across languages. There should be a simple translation between 'basic' vocabulary items such that a transitive verb like roll subcategorizes an object NP in every language. Even a brief review of the literature, however, suggests that the matter must be more complicated. Hopper and Thompson (1980) show that the notion of verb transitivity is related to a number of factors (e.g. aspect, mood, mode, punctuality, the affectedness of

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the object, and the individuation of the object).

Eastern Pomo, a Hokan language spoken in northern California, provides a striking example of the differences to be found in transitivity across languages (McLendon 1978). There are agent-taking verbs, which may also take patients; single patient-taking verbs, which may only take an agent if suffixed with the causative suffix or the reflexive; two patient-taking verbs; verbs which can occur with either a patient or agent depending on the speaker's perception of the presence or absence of participant control; and a small class of verbs of location and directed motion. In discussing the first or 'transitive' class of verbs and the last or 'intransitive' verb class, McLendon states that 'the members of these two classes of verbs cannot be determined on the basis of some universal definition of transitive-intransitive, such as "takes an object or not," but only by examining the case marking and number marking characteristically associated with each verb' (p. 6).

One way of settling the learnability issue is to examine how children acquire the transitivity distinctions in their language. Data on the acquisition of English unfortunately contains very little information on the child's transitivity distinctions. This is because English does not morphologically mark the difference, so many verbs can appear with or without a direct object. About the only information that exists for English is Bowerman's (1974, 1983) data on overgeneralized causative forms and Chris Dolleghan's (1982) study of children's metalinguistic judgements of verb transitivity. Both of these studies suggest that children do not fully control transitivity until the age of 8 or 9. In this paper, I will present some data on the acquisition of transitivity in Quiché, a Mayan language spoken in western Guatemala.

Quiché contains several morphological correlates of transitivity which must appear on each verb in the adult language. One is the system of verb terminations. Different termination markers are added to the verb depending on whether the verb is transitive or intransitive, as shown in (1):

(1) QUICHÉ VERB TERMINATIONS:

Status Categories	Root Transitive	Intransitive
Plain:	(-oh)	(-ik)
Dependent:	-aʔ/-a:	-a/(-oq)
Perfect:	-o:m	-inaq

(1a) k- Ø- waʔ- ik
asp-3s-EAT-term.

(1b) k- Ø- u- tix- oh
asp-3ob-3s-EAT-term.

The verb in (1a) is intransitive while that in (1b) is transitive. The -ik termination is only used with intransitive verbs in clause-final position, while the -oh termination is only used with transitive verbs in clause-final position. If a Quiché child did not distinguish between transitive and intransitive verbs he or she would

not be able to use the terminations correctly. One has to be a little careful because some Quiché verb roots can be used with either the intransitive or transitive terminations without any additional changes in their morphology (e.g. -tsa:q 'fall, drop'; -tiʃ 'spill'). This is because root transitive verbs in the passive voice take the intransitive terminations. However, there should not be many instances of passive in the children's transcriptions, and where it occurs, it should be obvious from the context whether the passive is intended or not. They will be especially obvious if the intransitive termination appears in a sentence which also contains a direct object.

The data I report in this paper comes from two girls, Al Tiya:n (aged 2;0) and Al Cha:y (2;9). I collected samples of their spontaneous speech over a nine-month period (Pye 1980). In her first sample, Al Tiya:n had an MLU of 1.31 and was basically holophrastic. Al Cha:y had an MLU of 1.57 in her first sample and had already entered the two-word stage. To decide whether the Quiché children were aware of the transitivity distinctions in their use of the verb terminations, I counted the number of transitive verbs in their speech with both terminations. I did not use transitive verbs ending in dependent -a?/-a: or intransitive verbs ending in dependent -a because I was not sure my transcription recorded final vowel length or glottal stops reliably. I did not count verbs which lacked the necessary termination since other factors (such as an awareness of the clause-final function or number of syllables in the word) might have contributed to this type of omission (Pye 1983). I did count cases where the termination had been overgeneralized to clause-medial position since I was interested in the transitivity distinction, not the clause-medial/clause-final distinction. Finally, the only 'errors' I counted were the use of terminations on a verb with a different transitivity. The results are shown in (2):

(2) VERB TRANSITIVITY:

	Al Tiya:n						Al Cha:y					
	Trans. Verb			Intrans. Verb			Trans. Verb			Intrans. Verb		
Samples	Cor.	Err.	Prop.	Cor.	Err.	Prop.	Cor.	Err.	Prop.	Cor.	Err.	Prop.
1-3	4	1	.80	9		1.0	6		1.0	13		1.0
4-6	6	1	.86	10	2	.83	26		1.0	40		1.0
7-9	5		1.0	27	2	.93	17	1	.94	45	2	.96
10-12	8	1	.89	30	3	.91	65		1.0	43		1.0
13-15	61		1.0	65	7	.90	39		1.0	43	5	.90

These results indicate an extremely early control of verb transitivity. The degree of sophistication the children show in transitivity may be better appreciated by comparing it to their control of the clause-medial/clause-final distinction encoded by these same verb terminations. The children's sensitivity to this distinction is shown in (3). For this table, I again counted all verbs with a termination, this time checking whether the termination occurred in clause-final contexts. The 'errors' on this table occurred when the children used

a termination in a clause-medial context or did not use the termination in a clause-final context. In fact, most of the errors occurred when children preserved the termination marker on certain, frequently occurring verbs (-e:k 'go'; -okik 'enter'; -petik 'come') in clause-medial contexts.

(3) CLAUSE-MEDIAL/CLAUSE-FINAL TERMINATIONS:

	Al Tiya:n						Al Cha:y					
	Trans. Verb			Intrans. Verb			Trans. Verb			Intrans. Verb		
Samples	Cor.	Err.	Prop.	Cor.	Err.	Prop.	Cor.	Err.	Prop.	Cor.	Err.	Prop.
1-3	4	1	.80	9	2	.82	3	6	.33	5	13	.38
4-6	6	1	.86	12	6	.67	6	4	.60	12	6	.67
7-9	2	2	.50	25	8	.76	9	10	.47	15	10	.60
10-12	8	6	.57	33	6	.85	15	5	.75	19	9	.68
13-15	10	3	.77	68	10	.87	21	15	.58	23	7	.77

It is interesting that the children overgeneralized the clause-final marker to clause-medial position, but did not overgeneralize between transitive and intransitive forms. Furthermore, I think (2) seriously underestimates the chidren's awareness of transitivity in that it only includes verbs with termination markers in the children's speech. For one thing, I did not count the many verbs the children produced without terminations, each of which could have been produced with an incorrect termination. Nor did I include derived transitive and intransitive verbs. These are derived from a neutral root by the addition of either a transitivizing or intransitivizing suffix:

(4)	ts'i:b'a:-x	ts'i:b'a-n-ik
	WRITE-tv'er	WRITE-iv'er-term.
	'write (something)'	'write'

Transitivizing and intransitivizing suffixes do not, by themselves, indicate whether the child considers the verb stem transitive or intransitive. They are similar to most transitive verbs in English in that further evidence in the form of an object NP is necessary in order to decide whether the child has used the correct suffix. However, if the transitivizing suffix was unanalyzed, or not analyzed correctly by the child, evidence of this misanalysis would turn up in the form of intransitive terminations added to stems with the transitivizing suffix or vice versa:

(5)	* k- Ø- in-ts'i:b'a-x-ik	* k-in-ts'i:b'a-n-oh
	asp-3ob-1s-WRITE-tv'er-term.	asp-1s-WRITE-iv'er-term.

Al Tiya:n and Al Cha:y did use some verb roots with both transitivizing and intransitivizing suffixes (including ts'i:b'a), however they never added an incorrect termination to the derived verb stems.

I would like to take a moment to consider the 'errors' shown in (2) above. I applied a very strict criterion in counting these errors; I counted any use of a termination with a verb of a different class. However, root transitive verbs such as (1b) which take transitive terminations in the active voice, form passives by simply substituting the intransitive termination for the transitive one, as in (6):

(6) k-Ø- u-tʃ'ay-oh
asp-3ob-3s-HIT-term.
'he is hitting (something)'

k-Ø-tʃ'ay-ik
asp-3s-HIT-term.
'he is getting hit'

When the children used the intransitive termination with verbs they regularly used with a transitive termination, I counted these as instances where the intransitive termination was overgeneralized to transitive verbs, that is, as an error in using the intransitive termination. Fifteen of their 19 intransitive errors are potentially passives, but unfortunately there is other evidence of passivization in only four of them, most notably in one of Al Tiya:n's utterances which contains the underlying agent in an oblique NP. The four transitive errors may be even more questionable since I counted any extraneous vowels at the end of an intransitive verb as an overgeneralization of the transitive termination. Thus, Al Cha:y produced an /u/ at the end of a passivized verb and Al Tiya:n produced an /o/ instead of the intransitive /a/. However, each child produced at least one identifiable transitivity error. In Al Tiya:n's case, it was in the context of talking about whether a dog was of the biting sort. Her mother asked whether the dog bit using the intransitive verb -tiyonik which contains both the intransitivizing suffix and termination. Al Tiya:n, though, wanted to know if the dog would bite her. She copied her mother's verb and added an emphatic object pronoun (tiyonik in). This is ungrammatical with an intransitive verb (I do not think she was saying that she bit). The correct Quiché expression would use a transitive form kinuti? in.

There are two other pieces of evidence pointing to an early acquisition of transitivity in Quiché. One is the set of subject markers on the children's verbs. Quiché is an ergative language; one set of subject markers is used with the subjects of transitive verbs while another set is used with the subjects of intransitive verbs. While some of the markers have similar forms in both sets, there are many differences. Unfortunately, the children's subject agreement data is not as rich as the data on their termination markers. This is because they began using the subject markers long after they were using the terminations. Al Cha:y began using subject markers regularly in session 17 while Al Tiya:n did not use them at all regularly while I recorded her. I went through their data, though, to check their sensitivity to the transitivity distinction. The results are shown in (7).

(7) SUBJECT MARKER TRANSITIVITY:

	Al Tiya:n					Al Cha:y				
Session	Tv pm's	Err.	Iv pm's	Err.	Prop.	Tv pm's	Err.	Iv pm's	Err.	Prop.
1-3	9		6		1.0	3				1.0
4-6	5		3		1.0	10	2	9	1	.84
7-9	6		4		1.0	12	1	5		.94
10-12	19		6		1.0	48	2	3		.96
13-15	25	1	4		.97	51		2		1.0

Once again, the children only made transitivity errors on a relative handful of verbs. In fact, the only errors which look real to me occur in Al Cha:y's sessions 19 and 23. In session 23 she wanted me to spin her around, but used the transitive first person plural subject marker qa- with an intransitive verb form -sutinik 'spin'. Since she produced 256 other person markers correctly in this sesion, I consider her transitivity error negligible. While they were not yet producing person markers on their verbs the children adopted a strategy of producing independent personal pronouns after the verb. Such a construction is only grammatical with emphatic pronouns in the adult language. At a later stage, the children shifted these pronouns to the preverbal position. Since the pronouns are identical in form to the absolutive set of person markers, the result appears as an 'error' in transitivity. I am fairly sure that the children did not intend to use these forms as person markers since there is often a pause between them and the verb, something that never occurs with person markers on the verb. Al Cha:y, in fact, prefaced some of these pronouns with the word kol 'as for ___'. The emphatic pronouns account for 6 of their 7 errors. Therefore I am inclined to believe that the Quiché children essentially do not make any transitivity mistakes when learning to produce person markers on verbs.

Finally, one might ask whether there was any correlation between the morphological marking of transitivity and syntax in the children's speech. Ironically, this turns out to be more difficult to judge for Quiché than English. Since non-focused, non-emphatic NPs are not obligatory in adult Quiché sentences with transitive verbs, their absence in children's speech is all the more difficult to detect. The table in (8) shows the proportion of the children's utterances with transitive verbs that contain an overt object NP. For comparison, 64 percent of the sentences with transitive verbs in a Quiché text (Norman 1976) contained object NPs. Since sentences in texts tend to be more elaborate than sentences in casual conversation, I would estimate that normally between 50 and 55 percent of the adult sentences contain an object NP. Thus, Al Tiya:n and Al Cha:y seem pretty close to the adult norm, although it took Al Tiya:n a little longer to reach it.

(8) OVERT OBJECT NPS:

	Al Tiya:n			Al Cha:y		
Session	No. of verbs	No. of Obj. NPs	Prop.	No. of verbs	No. of Obj. NPs	Prop.
1-3	25	6	.24	164	71	.43
4-6	29	8	.28	235	107	.46
7-9	53	23	.43	215	100	.46
10-12	100	35	.35	292	133	.46
13-15	83	43	.52	275	105	.38

Other possible syntactic evidence of transitivity would come from morphologically intransitive verbs occurring with direct objects. These are extremely difficult to detect in Quiché since both subject and object NPs follow the verb. If a child produces an intransitive verb followed by an NP, it is easy to interpret the NP as a subject, especially if it is a nonspecific expression like 'this' or 'that'. Nevertheless, a few errors of this kind are detectable, such as the one in Al Tiya:n's conversation that I discussed above. Another possibility would be to look for Quiché equivalents to the expressions which create problems for children learning English (passives, causatives, denominal verbs, etc.). While I have not looked at these constructions in any detail in Quiché, my feeling is that they would not add anything more to the story. Causatives, for example, occur in the children's speech almost as early as the verb terminations.

I can only conclude that Quiché children showed an early awareness of the transitivity distinctions in the verbs they were acquiring. This awareness manifests itself in a number of different ways over the entire course of their speech development from the first appearance of the verb terminations to the final acquisition of control relations between different clauses. The early acquisition of transitivity is particularly puzzling in light of the evidence the children receive from more mature speakers. For one thing, there are verbs which do not take a prototypical transitivity marker. I gave an example of an intransitive verb 'to eat' in (1a). The Quiché verbs meaning 'wait', 'fall', 'hurry', and 'scared' are transitive. Still another problem is that the verb endings are not a completely reliable guide to verb transitivity. The verbs -tsalix 'return' and -kowi:x 'hurry' have similar endings, yet the first is intransitive while the second is transitive.

One way out for the language learner would be to wait until a verb occurred in an utterance with a direct object NP before assigning it to a transitivity category. Several factors complicate this strategy in Quiché. Since the verb has obligatory agreement markers for both subject and object, one or more of these NPs are usually missing from a sentence. For example, fifty percent of the clauses in a Quiché text (Norman 1976) did not contain any overt NPs. Of those sentences which did contain overt NPs, 84 percent contained only a single term. Only 23 clauses (8 percent) in the entire text contained 2 terms. A Quiché child, therefore encounters a large number of sentences with a single overt NP. The verb in these sentences may

be grammatically transitive or intransitive, but the child has no way of knowing from the morphology whether the NP is a subject or object. A number of factors further complicate the situation: heavy object NPs are shifted to sentence-final position; focus, topicalization, and WH-movement move constituents to preverbal position; and passive and antipassive constructions change the transitive morphology to intransitive with agreement between the former object and verb in the passive, and subject and verb in the antipassive.

If a Quiché child guesses that a verb is transitive when it is grammatically intransitive, he or she will not find any positive evidence that they are wrong. They might observe that adult speakers never use the verb with an object NP, but they will also encounter many other instances of transitive verbs without overt object NPs. Such a guess would be similar to the examples that Bowerman (1974) gives of children using English intransitive verbs transitively to express causation. In English, however, children receive positive evidence -- in similar situations they hear more mature speakers using alternative expressions. The Quiché child hears the same verb in similar situations. However they do it, transitivity is present in the Quiché children's first utterances.

ACKNOWLEDGEMENTS

This work was supported in part by grants from The Wenner-Gren Foundation and The Organization of American States. The present state-sanctioned genocide in Guatemala makes it impossible for me to acknowledge the contributions of my Quiché friends and informants.

REFERENCES

Bowerman, M. 1983. How do children avoid constructing an overly general grammar in the absence of feedback about what is not a sentence? PRCLD 22.23-35.

Bowerman, M. 1974. Learning the structure of causative verbs: a study in the relationship of cognitive, semantic and syntactic development. PRCLD 8.142-78.

Dollaghan, C. 1982. The acquisition of verb propositional schemata. Journal of Education 164.210-22.

Hopper, P. & S. Thompson. 1980. Transitivity in grammar and discourse. Language 56.251-99.

McLendon, S. 1978. Ergativity, case, and transitivity in Eastern Pomo. IJAL 44.1-9.

Norman, W. 1976. Quiché text. In L. Furbee-Losee (ed.), Mayan texts I (IJAL NATS, 1:1). Chicago: University of Chicago Press.

Pinker, S. 1984. Language learnability and language development. Cambridge, MA: Harvard University Press.

Pye, C. 1983. Mayan telegraphese: intonational determinants of inflectional development in Quiché Mayan. Language 59.583-604.

Pye, C. 1980. The acquisition of grammatical morphemes in Quiché Mayan. Unpublished dissertation, University of Pittsburgh.